

REMARKS

Claims 1-42 are pending in the application. Claims 1-42 were rejected. No claims are being amended. No new matter is being introduced.

Before discussing the specifics of the rejections, Applicant believes a brief description of the invention and the cited references may be useful.

Applicant's invention as recited in claim 1 is directed to a method for adapting to rapid changes affecting a signaling path between a first station and a second station, such as a base station and a mobile station. The method includes, "calculating a metric indicative of a changing environment between the first and second stations as a function of a change in at least one modulation attribute of a signal transmitted across the wireless link between the first and second stations." The signal may be a constantly active pilot signal that serves as a synchronization signal for the mobile station. The claimed signal may also be another signal transmitted between the first and second stations.

The measurement of the modulation attribute(s), which may be attributes of the amplitude, frequency, or phase modulation(s), is used instead of a simpler Signal-to-Noise Ratio (SNR) measure in determining rapid changes. In the signaling environment, SNR metrics, including statistical measurements thereof, suffer sensitivity in high signal strength areas since the signal is implementation-noise limited rather than thermal-noise limited. SNR metrics may also produce erroneous results as a result of Automatic Gain Control (AGC) circuitry in the receiver.

The present invention improves on the prior art by measuring at least one modulation attribute, e.g., amplitude, frequency, or phase modulation.

Referring now to the specific rejections, Claims 1-8, 11, 14, 18-28, 31, 34, and 38-42 were rejected under 35 U.S.C. § 102(b) as being anticipated by Cheng.

Cheng at col. 13, lines 5-55 does disclose a system that estimates a speed of a mobile unit relative to a stationary base unit. FIG. 12 of Cheng shows a graph of an amplitude (i.e., energy) of transmission by a moving vehicle (or reception by the moving vehicle) of a signal generated by the other. The slope of the amplitude is indicative of the speed of the mobile unit. But, the slope is estimated by measuring the difference between short term energies of a plurality of

contiguous symbols. As can be seen in Cheng, FIG. 13, the average energy of groups of five contiguous short term energy $E(k)$ is taken. A second group is separated from a first group by five short term energy points. The magnitude of the difference between the first group and the second group is computed. This process is repeated 30 times by shifting the groups by one short term energy point each time, to result in an estimate of the speed of the mobile unit.

Thus, Cheng uses the detected energy level of a received signal to calculate the speed of the vehicle, which is quite different from Applicant's use of modulation attributes (i.e., amplitude, frequency, or phase modulation attributes) to calculate a metric indicative of a changing environment.

Cheng also discloses processing other signal parameters, such as phase and frequency; however, such processing is related to normal receiver operations, e.g., demodulation of the received RF signal, and are not used for "calculating a metric indicative of a changing environment," as recited in Applicant's claim 1.

Because Cheng only discloses calculating the speed of a mobile unit relative to a base unit by processing energy, Cheng does not disclose every limitation of Applicant's claim 1.

Accordingly, Applicant respectfully submits that the rejection based on Cheng under 35 U.S.C. § 102(b) is improper and should be withdrawn.

Independent claims 21, 41, and 42 include similar limitations as claim 1 and should be allowed under 35 U.S.C. § 102(b) for similar reasons.

Claims 2-8, 11, 14, 18-20, 22-28, 31, 34, and 38-40 depend from the independent claims and should also be allowed for at least the same reasons.

Claims 9-10, 12-13, 15-17, 29-30, 32-33, and 35-37 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Cheng in view of Thomas (U.S. 6,697,642).

Because these claims also depend from the independent claims, the arguments presented above in reference to claim 1 apply. Therefore, for at least the same reasons, Applicant respectfully submits that dependent claims 9-10, 12-13, 15-17, 29-30, 32-33, and 35-37 should be allowed under 35 U.S.C. § 103(a) for at least the same reasons.

CONCLUSION

In view of the above amendments and remarks, it is believed that all claims (claims 1-42) are in condition for allowance, and it is respectfully requested that the application be passed to issue. If the Examiner feels that a telephone conference would expedite prosecution of this case, the Examiner is invited to call the undersigned.

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Dated: 7/26/04